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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/900,720      | 07/06/2001  | Shun Hang Luk        | BiT006              | 7017             |

7590 04/12/2005  
BiTMICRO Networks, Inc.  
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Fremont, CA 94538

EXAMINER

SHIN, CHRISTOPHER B

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2182

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/900,720

**Applicant(s)**

LUK ET AL.

**Examiner**

Christopher B Shin

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-16, 20-28 and 31 is/are rejected.  
7) ☒ Claim(s) 17-19, 29 and 30 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413).  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The Amendment received October 29, 2004 has been entered and carefully considered. Claims 1-31 are pending in the application.

### ***Response to Arguments***

2. In response to The Examiner 's Assertion of Official Notice, the examiner does not understand what the applicant is traverse of, since there are too many types to list to support the official notice. The examiner asks the applicant to challenge a specific type of memory, that is relevant to the claimed subject matter, so that examiner can provide a specific answer with publication well-known at the time of the invention.

The examiner also suggest the applicant to look & search computer dictionaries and some of basic level computer structures books and memory books, if the applicant truly believes that usage of different types are not commonly known in the art.

3. In response to the arguments under Independent Claims 1, 8, 20 & 31, that the Tuma doe not even disclose sold-state non-volatile memory, the examiner traverses such argument. Clearly, Tuma teaches SSD (12), see figure 1 and the respective section, which are equivalent to the claimed "solid-state non-volatile memory.
4. In response to the arguments under Dependent Claims of pages 3 & 4, the same reasons/response of the independent claims applies to the dependent claims.
5. On page 4 (second paragraph) – page 5 (end), the examiner disagrees with the applicant's argument regarding the improper arguments. The Primary reference Hoeses clearly teaches the motivation of using "STORAGE DEVICE" and "BUFFER"

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(equivalent to the claimed "cache") in a network environment; therefore, all the motivation of using, adding or combining such added limitations are disclosed by the combinations of Hoeses, Tuma & Dornier references.

6. For the above reasons, the examiner maintains the same art rejections as follows.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 7-11, 14-16, 20, 22-23, 26-27 & 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoeses et al. (5,941,972) in view of Tuma et al. (6,035,384).

a. The combination of Hoeses & Tuma references teach the claimed limitations as follows:

Claims 1, 8, 9, 10, 14, 20, 22, 26, 31

Hoeses et al.

- A network storage device
  - Feature of (50) of figure 3, see also figure 1
- An interface configured for receiving an I/O request via a network
  - Feature of (57/76) of figure 3
- A solid-state non-volatile memory
  - Not expressly disclosed by Hoeses reference
- Controller coupled to said interface and said solid-state non-volatile memory
  - Feature of (56/76) of figure 3

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- Wherein said controller is configured for receiving said I/O request from said interface and for processing said I/O request
  - Feature of (56/76) of figure 3
- Solid-state non-volatile memory is configured for storing data associated with the I/O request when requested by said controller
  - Feature of (56/76) of figure 3 with exception of the memory type
- Solid-state non-volatile memory is a flash memory type/RAM
  - Feature of (56/76) of figure 3 with exception of the memory type

Claim 2-3,7,11,15,16,23,27Tuma et al./Hoese et al.

- Wherein said I/O request is a file system call and said interface is an Ethernet network interface
  - Feature of column 5, line 58
- Wherein said I/O request is a file system call and said interface is a Fibre Channel interface
  - Feature of column 5, line 13
- A peripheral interface coupled to said controller and configured for coupling to at least one mass storage device
  - Feature of (57/76) coupled to (60, 62,64)

b. As for the claims 1-3 ,7-11, 14-16, 20, 22-23, 26-27 & 31, the difference between the claimed limitations and the teachings of Hoese reference is that the Hoese reference does not expressly disclose a specific type of memory device. The difference is a commonly practiced & well known in the art. One skilled in the art knows different types of memories and their design pros and cons (e.g., speed/reliability vs. cost) ; examiner takes official notice on such well known types and usage of memories. As evidence, Tuma reference discloses a specific type as claimed for better speed and reliability of data, and the Tuma reference also teaches a very similar environment as claimed and Hoese. Therefore, it would have been obvious at the time the invention was made to one having

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ordinary skill in the art to incorporate the Tuma's teachings into Hoese's teachings for the reasons stated above.

9. Claims 4-6, 9, 12, 13, 21, 24, 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoese in view of Tuma as applied to claim \*\*1-3, 7-11, 14-16, 20, 22-23, 26-27 & 31 \*above, and further in view of Dornier et al. (5,835,955).

i. Teachings of the parent claims are discussed above and similarly applied here.

Claims 4-6,9,12,13,21,24,25,28

Dornier /Tuma/Hoese et al.

- A volatile memory coupled to said controller and for caching said data before said data is written to said solid-state non-volatile memory
  - Feature of cache (61)
- Controller is configured to read from said solid-state non-volatile memory if said I/O request correspond to read request and if said volatile memory does not contain the data corresponding to the read request
  - Feature of cache (61)
- Wherein said controller is configured for flushing said volatile memory to said solid-state non-volatile memory when the network storage device experience a power loss
  - Feature of cache (57,61,69,71)

ii. As for claims 4-6, 9, 12, 13, 21, 24, 25 and 28 are further directed to operational and functional characteristics of having Cache memory that are not specifically disclosed by the Hoese and Tuma. However, the difference is also commonly practiced & well known in the art. One skilled in the art knows the benefit of adding cache type of memory of the well-known benefit of faster data accessing speed. As evidence, Dornier reference teaches such benefit of having cache, as claimed in a very similar environment of network storage system. Therefore, it would have

been obvious to one having ordinary skill in the art to add the commonly known & practiced cache technique in the art of Hoese & Tuma

***Allowable Subject Matter***

10. Claims 17-19 & 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher B Shin whose telephone number is 571-272-4159. The examiner can normally be reached on 6:30-5:00 M,Tu,Th,F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher B. Shin  
Primary Examiner  
Of 2182

April 7, 2005  
CBS

A handwritten signature in black ink, appearing to be 'CBS' or a stylized version of the name, located below the printed name of the examiner.